

# Breeding Marine Ornamentals

Crash course for beginners  
A.K.A “It aint so hard!”

# Why breed?

- ▶ As Matt Pedersen says “it’s a chance for a first!”
- ▶ To reduce impact from wild caught trade
- ▶ To (hopefully) offset some of the hobby costs
- ▶ Out of general interest (it’s fun!)
- ▶ Because baby fish are just too damn cute

# Easy breeding 101 pick a fish

Beginner fish listed below were chosen based on frequency of spawn, short larval period, ease of pairing, low requirements, and of course.... They are all well documented!

- ▶ Clownfish
- ▶ Banggai Cardinal Fish
- ▶ Dottybacks
- ▶ Chromis

# Easy breeding 101 equipment

Not every setup is complex!

- Buckets
- Small Tanks
- Tupperware
- Soda bottles

Can all be used for cultures and larval tanks!

- ✓ Air pumps
- ✓ Airline tubing
- ✓ Air Valves
- ✓ Heaters
- ✓ Good food variety

Are probably the only major requirements!!



# Easy breeding 101 conditioning

Remember that variety of food piece?

**It's probably the most  
important!**

Fish utilize a large amount of energy just to survive, anything left over is then used for reproduction. By providing ample nutrition we can help encourage the reproductive piece. This means one thing:

**FEED A LOT!**

**FEED OFTEN!**

**THEN FEED MORE!**

And if your not sure your feeding enough....

**TOSS IN SOME MORE!**

# Easy breeding 101 conditioning

- ▶ Use a supplement such as Selcon or Garlic
- ▶ Keep water parameters stable
- ▶ Avoid stressing your broodstock
  - Don't move rock around
  - Don't make major changes
  - Avoid adding aggressive tank mates

And most of all... be patient!!



# Easy breeding 101 broodstock tank tips.

Keeping your tools  
organized and  
readily available  
increases your  
chances of success





# Easy breeding 101 broodstock tank tips.



If you can... use valves in your plumbing so you can easily (and quickly) shut off flow to broodstock tanks for larval collection.

\* Note, slug xing sign not required to breed fish!

# Easy breeding 101 broodstock tank tips.



PVC with end caps and some “table saw engineering” can be used to whip up a quick overflow screen. This will help keep fish in grow out stage from sailing the overflow, as well as help keep larvae in when a hatch occurs.

# Easy breeding 101 first foods!

Probably the most critical contributor to success is going to be how and what you feed your babies! First foods may seem complex but it's a lot simpler than you think!

- Rotifers are typically first
- Baby brine shrimp are often second \*
- Crushed flake is often third

# Easy breeding 101 rotifers

Most think that rotifers means growing their own phyto, this is simply NOT true. Many breeders are having great success using prepared algae to enrich rotifers.

- Reef Nutrition phyto feast
- DT's phytoplankton
- Alga Gen's Phyco Pure
- And a variety of others

# Easy breeding 101 rotifers

Whether culturing rotifers on over the counter algae or cultured live algae you should invest some time in building a culture rack. This can range from a simple shelving unit to a customized solution such as mine show here. (note the cultures shown are algae).



# Easy breeding 101 rotifers

Keeping rotifer cultures is a simple task, one merely needs a vessel to keep them in with light aeration (no airstone) and to keep the water tinted slight green with food.

- Change water often (1 / 3 daily if possible)
- Best to sieve rotifers through a 53um mesh before feeding to larval tank (coffee filters work great as well)
- Keep salinity lower than larval tank but no more than 5 points lower (ex. 1.026 larval tank, rotifers kept at 1.022)
- Always keep more than one culture!
- Keep water tinted light green, do not let it clear.



# Easy breeding 101 rotifers

Small vessels are easy to maintain, and as stated before....  
Always keep more than one culture!

I love these Sterilite snap-ware containers with vent...  
unfortunately I havent been  
able to find the vented ones  
again... bummer.





# Easy breeding 101 Brine shrimp

Baby brine shrimp is a somewhat interesting method, many have ditched this “middle food” in favor of earlier weaning to flake and prepared diets. There are a number of larval weaning diets out there such as Otohime but if you do choose to use baby brine shrimp it's a simple go round, just toss eggs in hatchery and wait about 24 hours!

- Choose high quality eggs
- Spend the extra few dollars on a hatcher!
- Decapsulate your eggs if possible
- Be sure to feed within a few hours of hatching, and feed sparingly!

# Easy breeding 101 crushed flake

Wow I kinda feel odd dedicating a slide to this one!! But beyond crushed flake there are a number of options out there for larval weaning. Otohime has a full line of rearing diets varying in sizes. Cyclopeeze is also a very common food used. Just remember, it has to fit in the fishes mouth!

# Easy breeding 101 larval tank

The larval tank and it's upkeep is going to be the most uphill battle in most any case. While the size and shape of the tank is not always of concern with beginner fish, there are a few rules of thumb:

- Change water daily! Use a piece of airline tubing as a siphon so that you can avoid siphoning out fry
- Keep temp and salinity stable
- Pinpoint light should be avoided, ambient light is fine.
- Having the bottom of the vessel white aids the larvae in finding food.
- During the first few days, food concentration (rotifers) should be high. Always good to tint the water slight green with algae as well to ensure the rotifers continue to stay enriched for nutrition.
- Larval tanks should always be standalone to avoid contaminating / crashing other systems

# Easy breeding 101 larval tank

Typically I try to choose a smaller larval tank over a larger one as this makes water changes smaller and requires less food to saturate the area.

When using a 10 gallon tank I typically only run the tank at 50% fill for the first 4 – 5 days, then fill higher as the larvae continue to grow.

Buckets, tupperware, goldfish bowls, all make excellent rearing tanks but there are some general guidelines that must be followed with set up of ANY larval system

# Easy breeding 101 larval tank

General setup guidelines:

- Use a heater without a status light (I prefer the stealth models)
- The tank should be easy to shroud with a dark towel or trash bag, if ambient light seems too much (larvae rush away or are overly attracted) shroud the tank!
- Aerate the water! Airstones are a no-no but keep aeration high. Fish larvae love flow!
- Airlift sponge filters are a god send!!
- Set up tank at least 4 days prior to hatch, triple check temp, salinity, and ammonia parameters each day to make sure you are ready!
- Water change water should be pre-heated to the same temp, consider using dosing pumps or slow siphon to re-fill

# Easy breeding 101 larval tank

Here's the general idea --

The sponge filter you see there is used when the tank has no fry, when larvae are first introduced it is replaced with a piece of rigid tubing for flow. After larvae begin to morph it is then added back to assist in filtration.



# Easy breeding 101 Grow out

What do you do when your fish get too large for the larval tank?:

- Grow out systems are much like any other reef tank (and can be plumbed or part of your main system).
- Flow can be increased in the grow out tank, and it is often preferred to!
- Some breeders set up a separate tank / sump / skimmer system for grow out while others plumb a small tank such as a 40 breeder to their main systems for stability.
- The only major concern with grow out is keeping the fry from surfing the overflow, screens can be utilized to avoid this very easily.



# Easy breeding 101 Grow Out



Remember that PVC overflow contraption....

Here it is again!! Very useful in grow out systems!

# Easy breeding 101 Resources

- The MASM breeding initiative ([www.masm.org](http://www.masm.org))
- Marine ornamental fish and invertibrate breeders ([www.mofib.org](http://www.mofib.org))
- Breeders Registry ([www.breedersregistry.net](http://www.breedersregistry.net))
- Marine Aquarium Handbook beginner to breeder (Martin A. Moe)
- The Complete Illustrated Breeders Guide to Marine Aquarium Fishes (Matthew L. Wittenrich)
- Clownfishes (Joyce. D. Wilkerson)
- The Plankton Culture Manual (Frank Hoff, Terry Snell)
- And of course... [www.copepodgeek.com](http://www.copepodgeek.com)

# References

The plankton Culture Manual (Hoff, Snell)

Clownfishes (J. Wilkerson)

Conditioning, Spawning, and Rearing of Fish with Emphasis on Marine Clownfish (Hoff)

The Complete Illustrated Breeders Guide to Marine Aquarium Fishes (M. Wittenrich)

Many, Many wonderful people who post and share information at [www.masm.org](http://www.masm.org), [www.mofib.org](http://www.mofib.org), and [www.reefstewardshipfoundation.org](http://www.reefstewardshipfoundation.org) (notably Tal Sweet, Andy Berry, and Matt Pedersen)

# The END....

For now.....